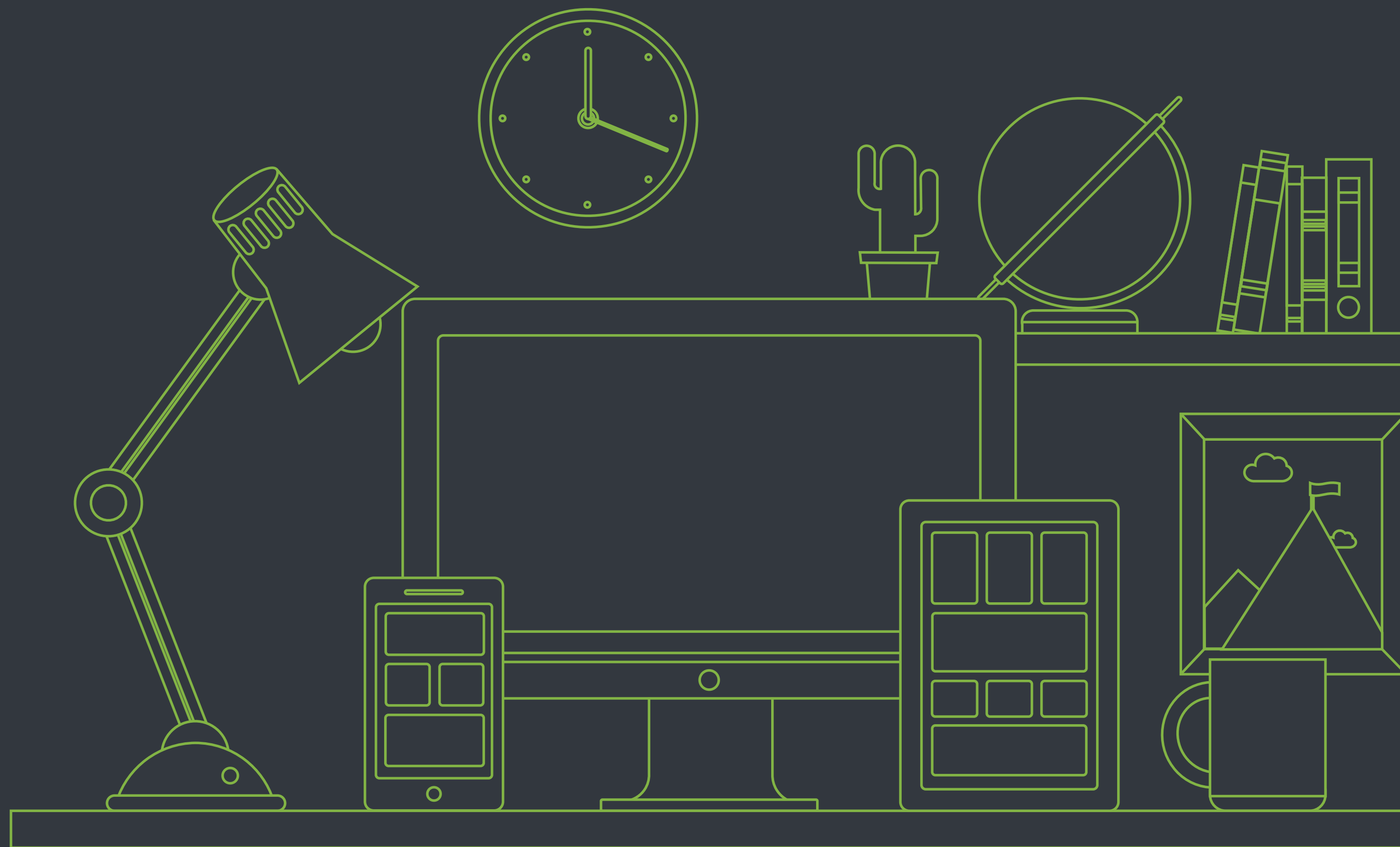


<https://aka.ms/vso-online>



VISUAL STUDIO
CODESPACES

@rorypreddy



AGENDA

1. WHAT IS VS ONLINE?

2. SECURITY

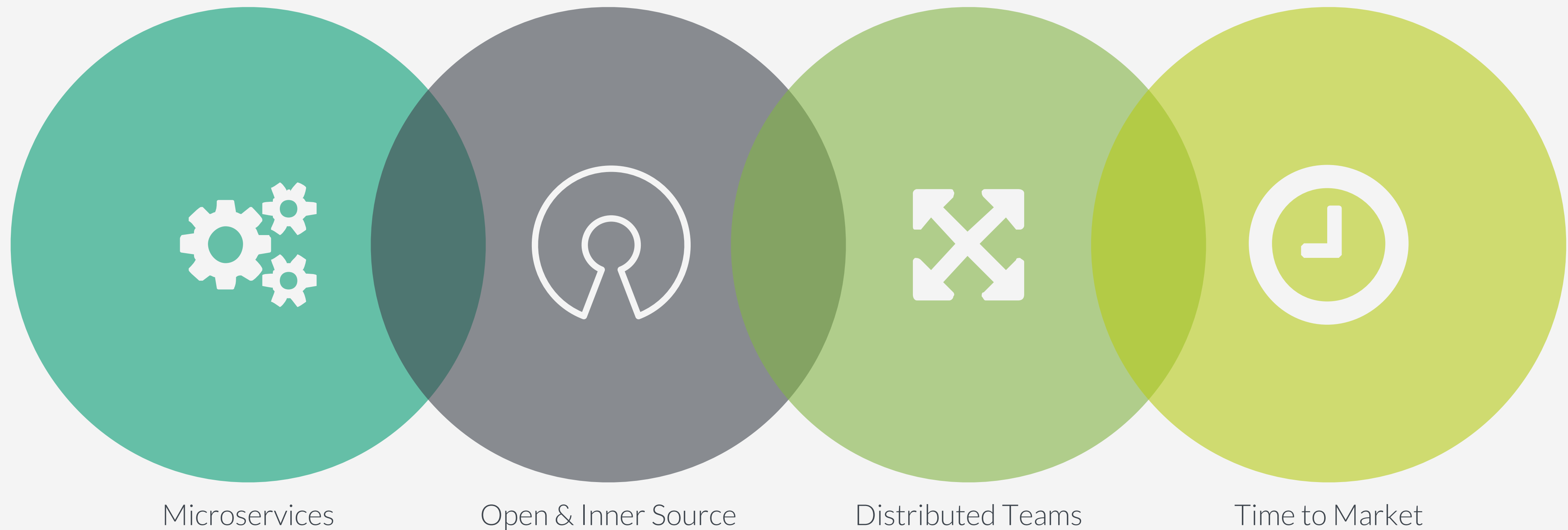
3. CONFIGURATION

4. PRICING

5. Demo

6. Roadmap

TRENDS



WHAT IS A DEV ENVIRONMENT?



WHAT IS A DEV ENVIRONMENT?

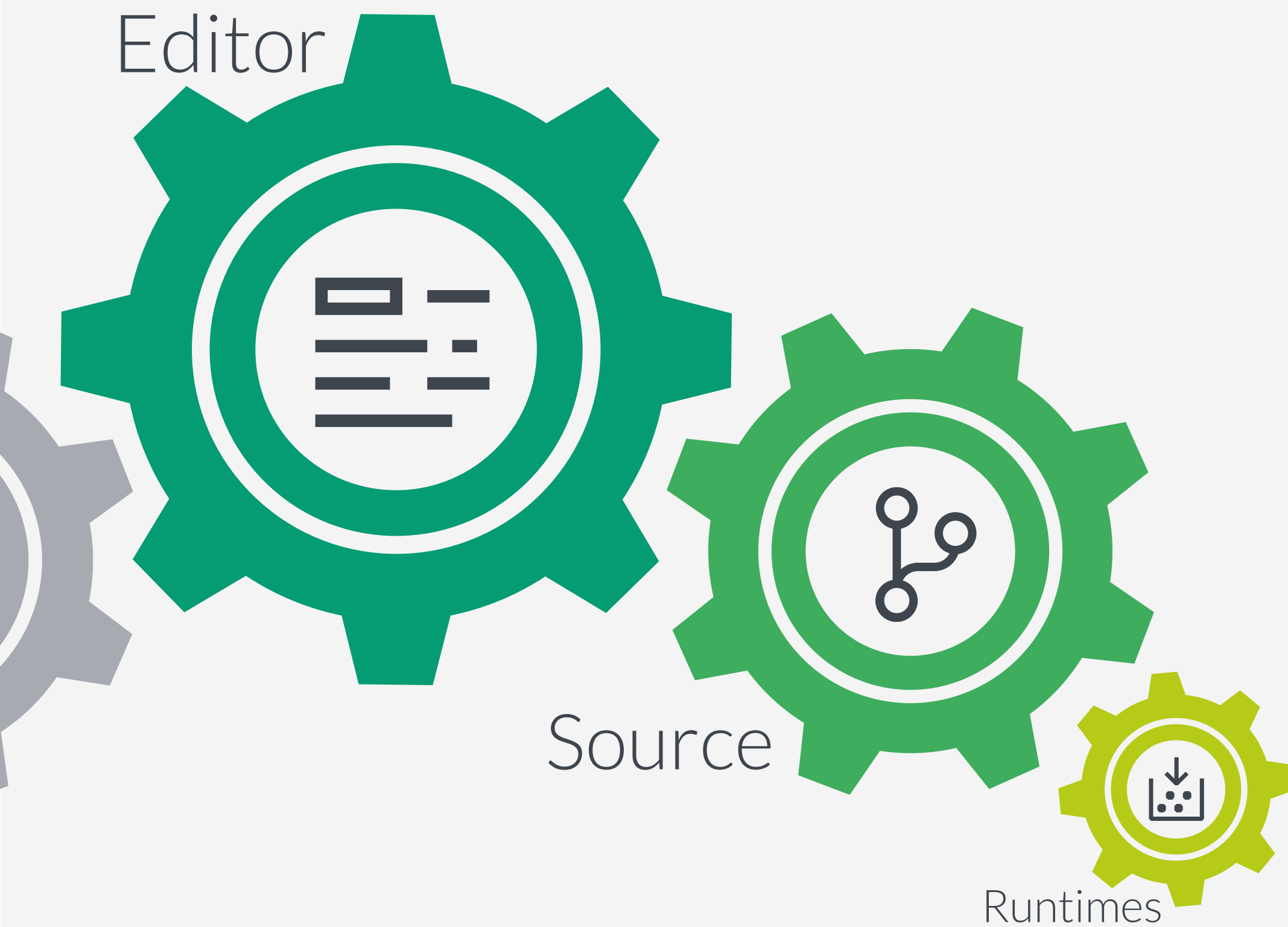
Editor



WHAT IS A DEV ENVIRONMENT?



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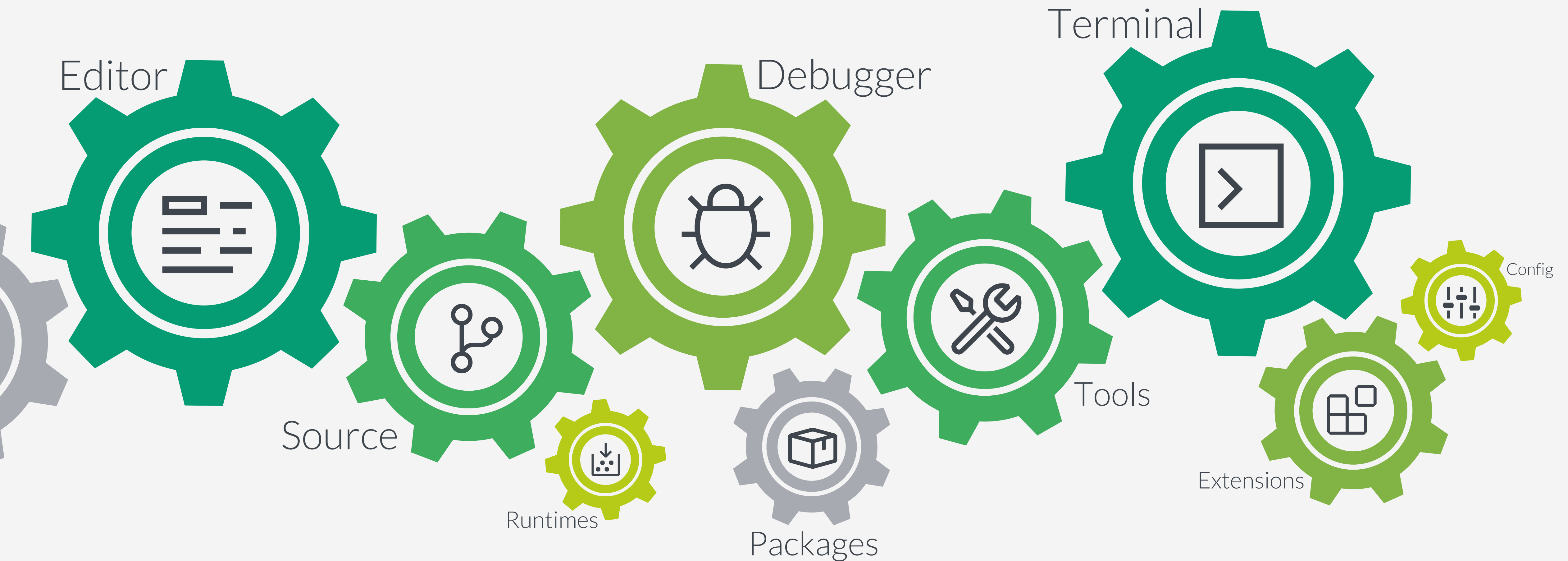
WHAT IS A DEV ENVIRONMENT?



WHAT IS A DEV ENVIRONMENT?



WHAT IS A DEV ENVIRONMENT?



WHAT IS VS ONLINE?



MANAGED ENVIRONMENTS FOR ANY PROJECT

Fully-managed, on-demand dev environments that dramatically reduce setup and maintenance



FEEL AT HOME EVEN WHEN AWAY

Environment requirements are auto-detected, but can be configured, and your settings, themes, Git identity, and dotfiles are roamed so the experience looks and feels like local



DEVELOP FROM ANYWHERE

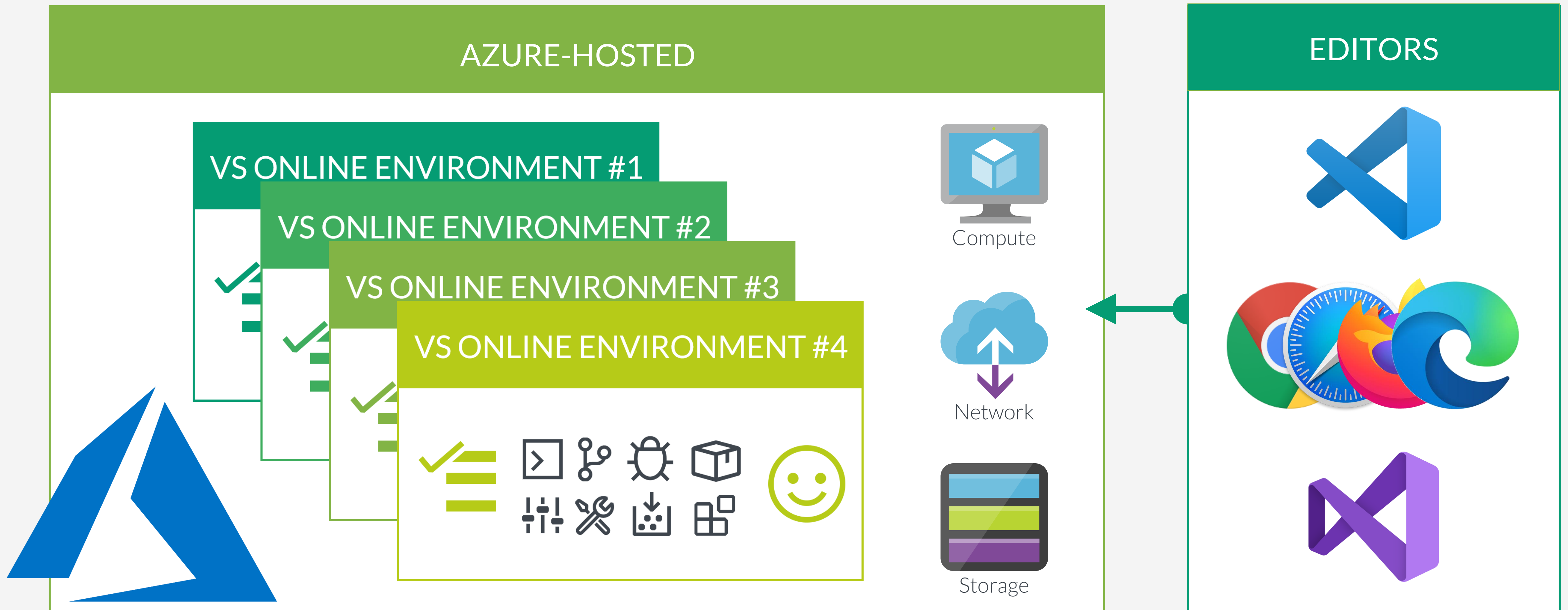
Connect from anywhere: Visual Studio, Visual Studio Code, browser-based companion editor



SUPERCHARGED COLLABORATIVE DEVELOPMENT

Fully collaborative environment, complete with AI-assisted development support

VISUAL STUDIO ONLINE



VISUAL STUDIO ONLINE COMPUTE

1

AZURE HOSTED

Environments are hosted in Azure, the [most trusted cloud](#).

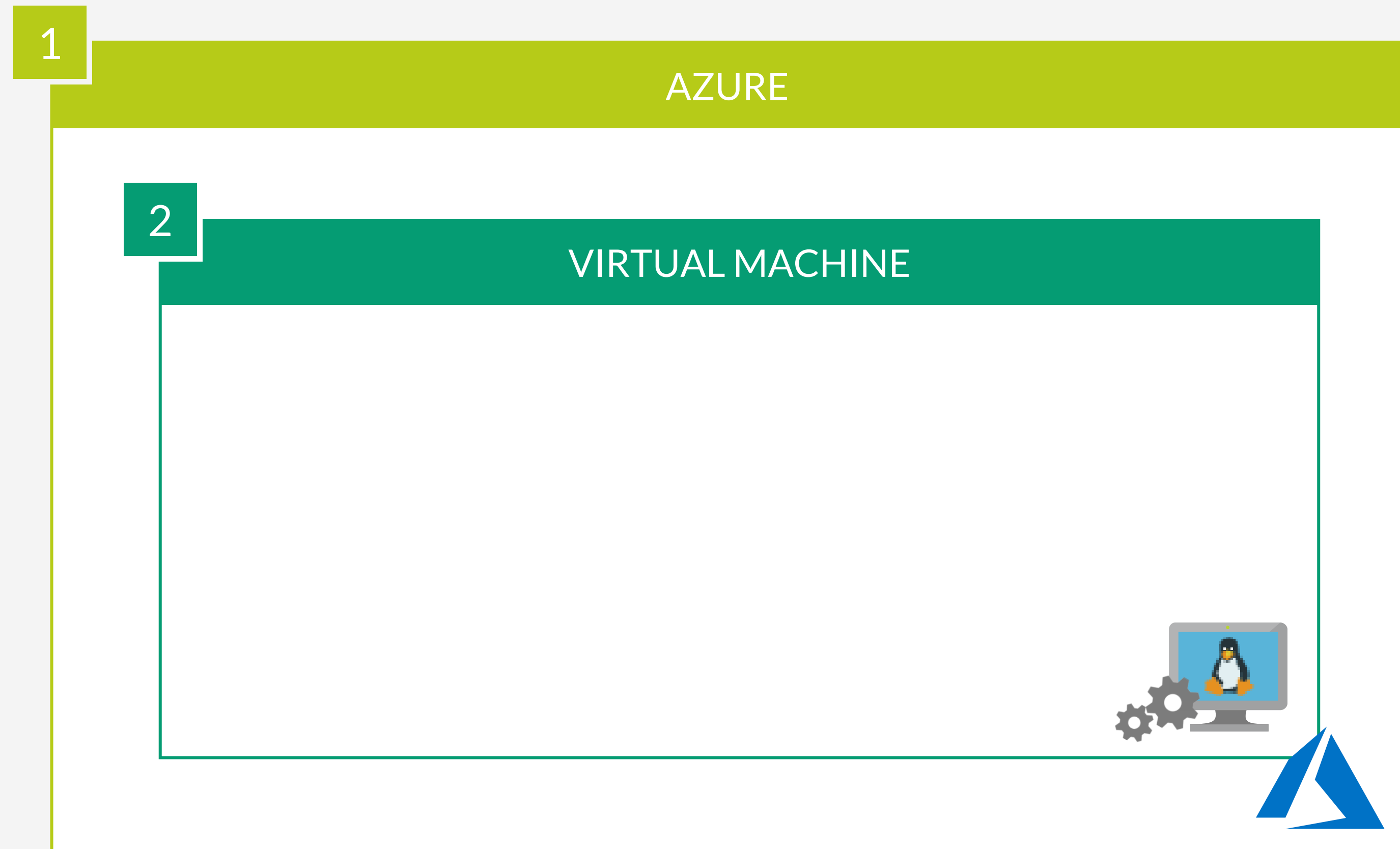
1

AZURE



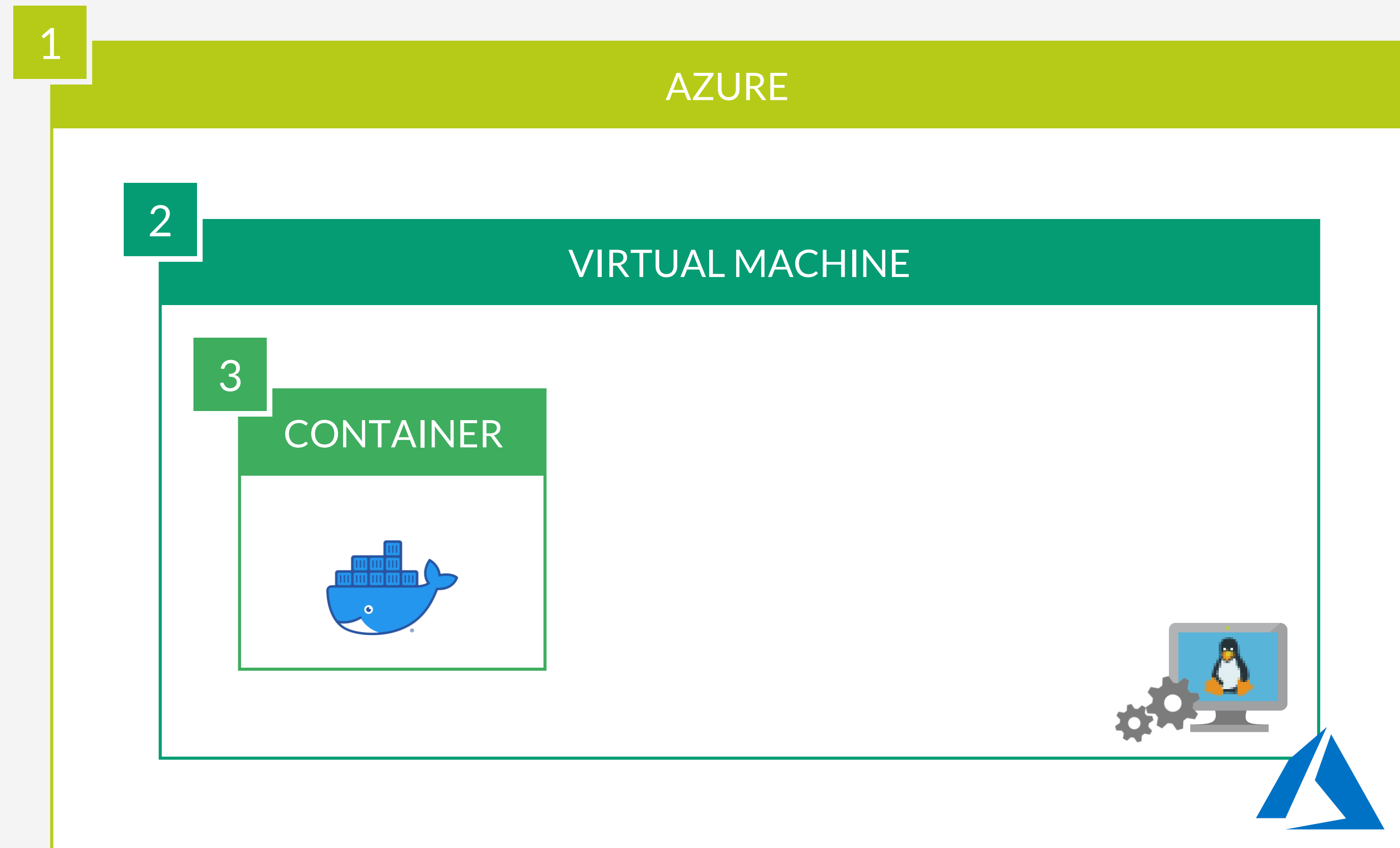
VISUAL STUDIO ONLINE COMPUTE

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Environments are hosted in Azure, the most trusted cloud.
- 2 VIRTUAL MACHINE ISOLATION**
Each environment runs on a dedicated VM which is automatically suspended and deleted when not in use to reduce costs.



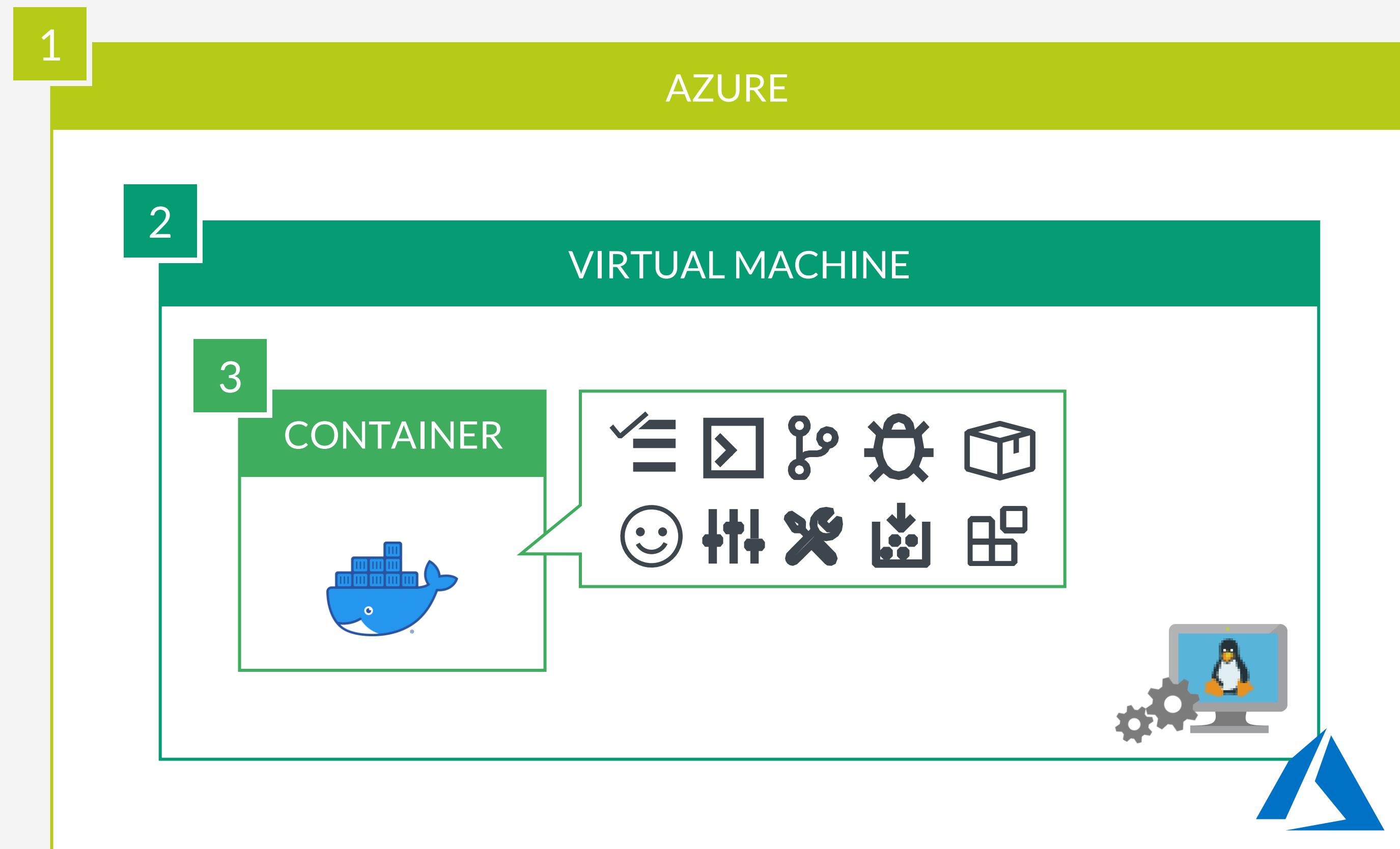
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Environments run in containers based on our [default image](#), or [your own custom Dockerfile or image](#).



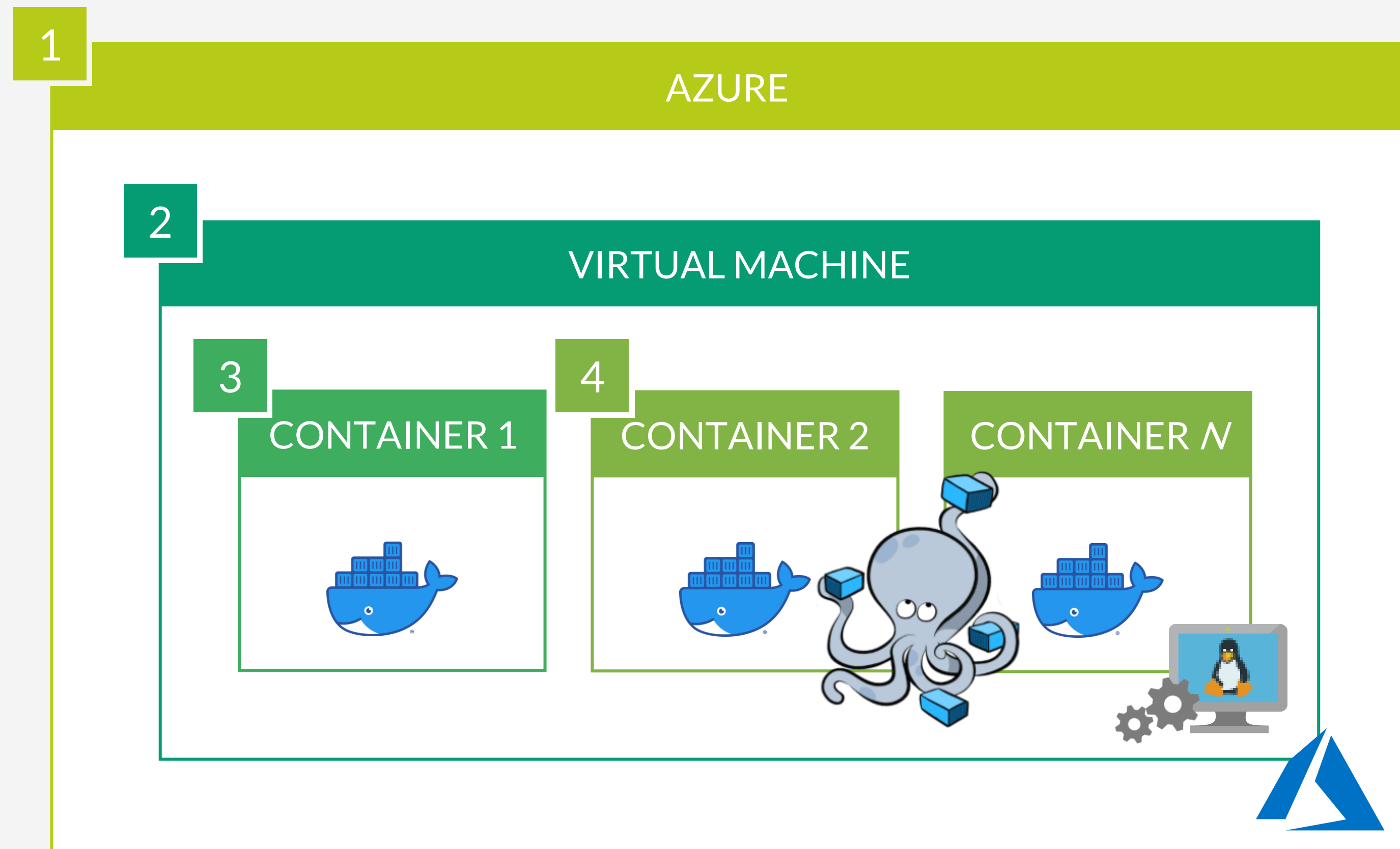
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- 3 ENVIRONMENT CUSTOMIZATION**
Environments run in containers based on our [default image](#), or [your own custom Dockerfile or image](#).
- 4 COMPOSED ENVIRONMENTS**
Compose together complex development environments with [Docker Compose](#) support.*

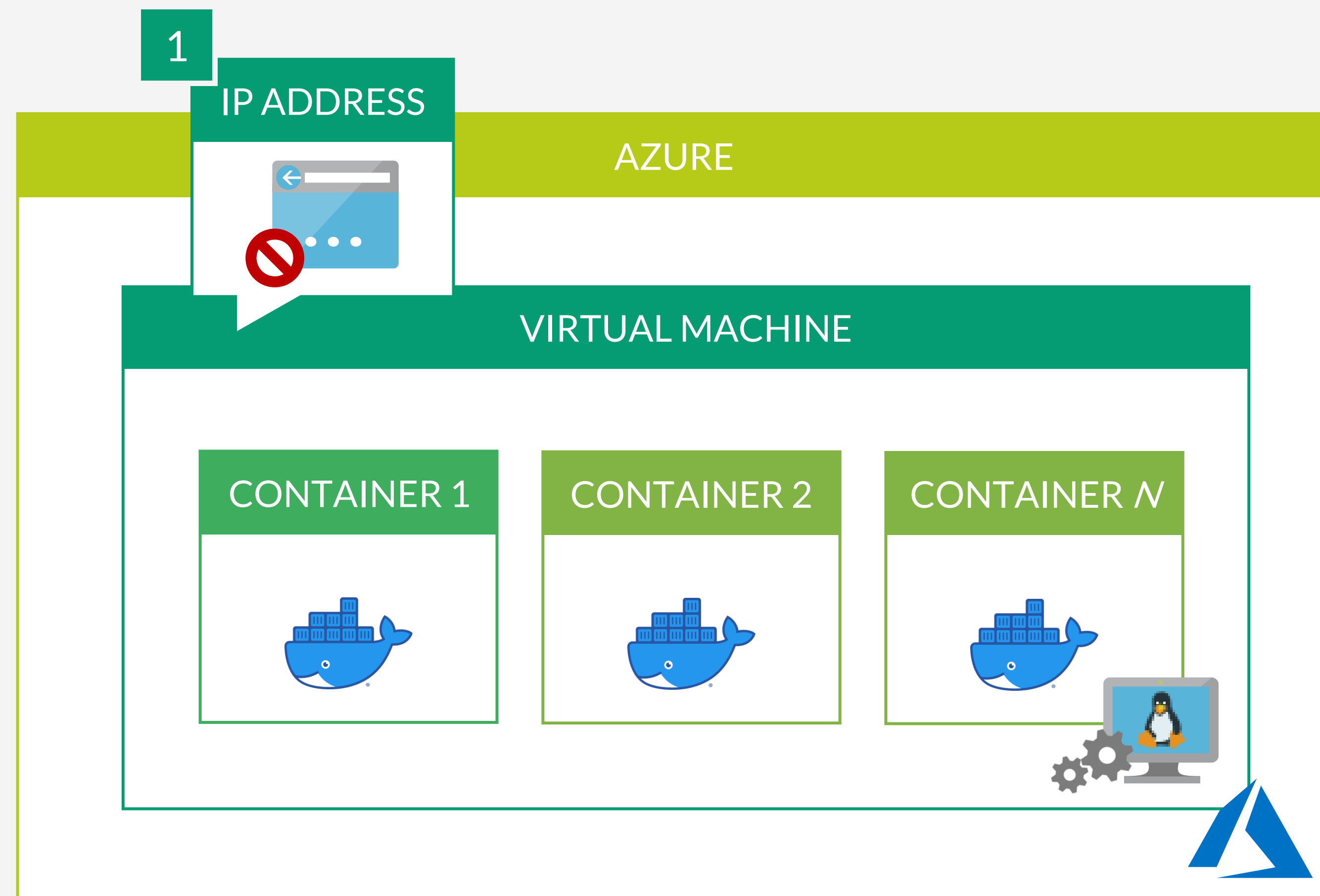


VISUAL STUDIO ONLINE NETWORK

1

NO PUBLIC IP ADDRESS

Environments are not addressable via a public IP.



VISUAL STUDIO ONLINE NETWORK

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NO PUBLIC IP ADDRESS

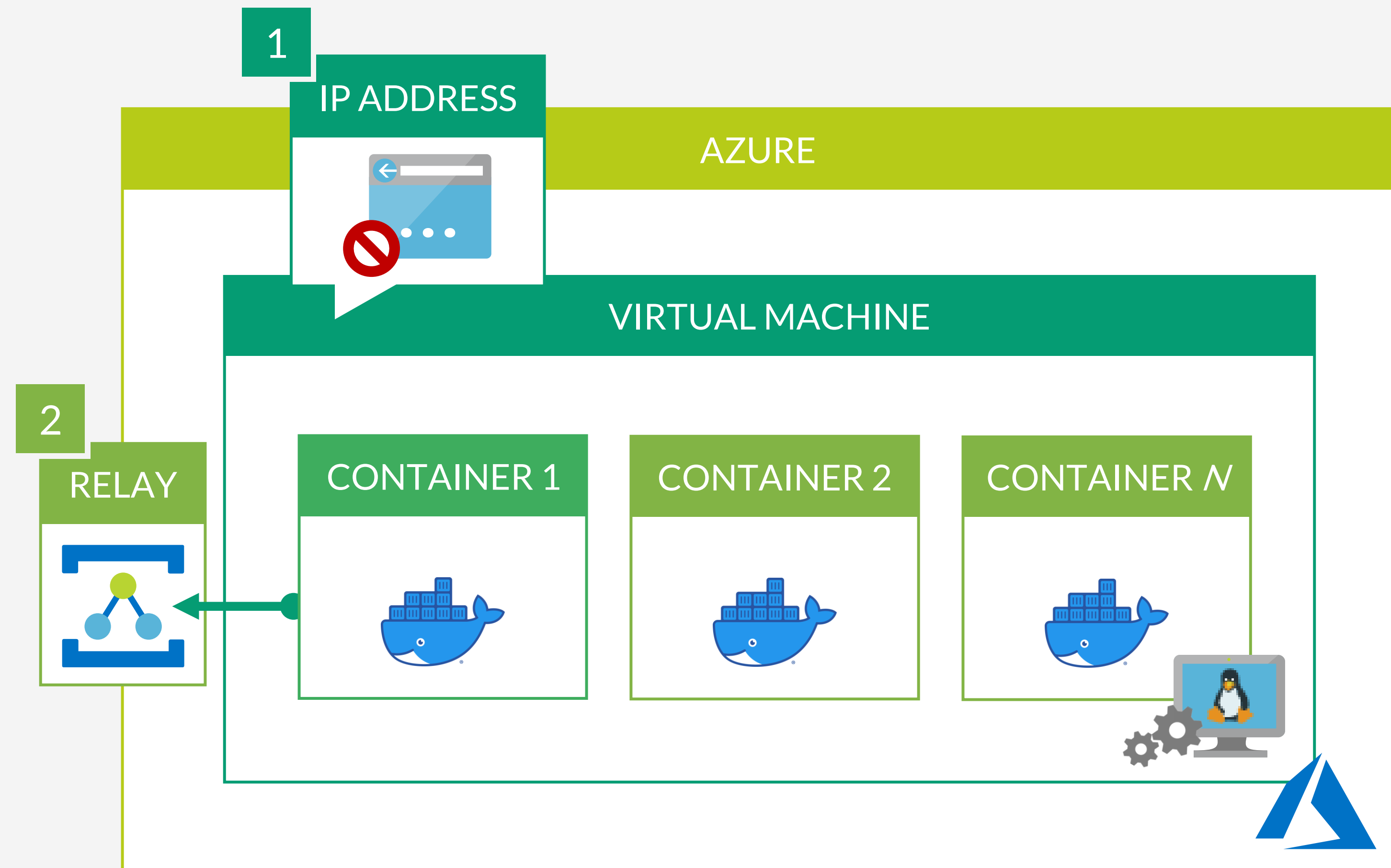
Environments are not addressable via a public IP.

2

NO INBOUND TRAFFIC

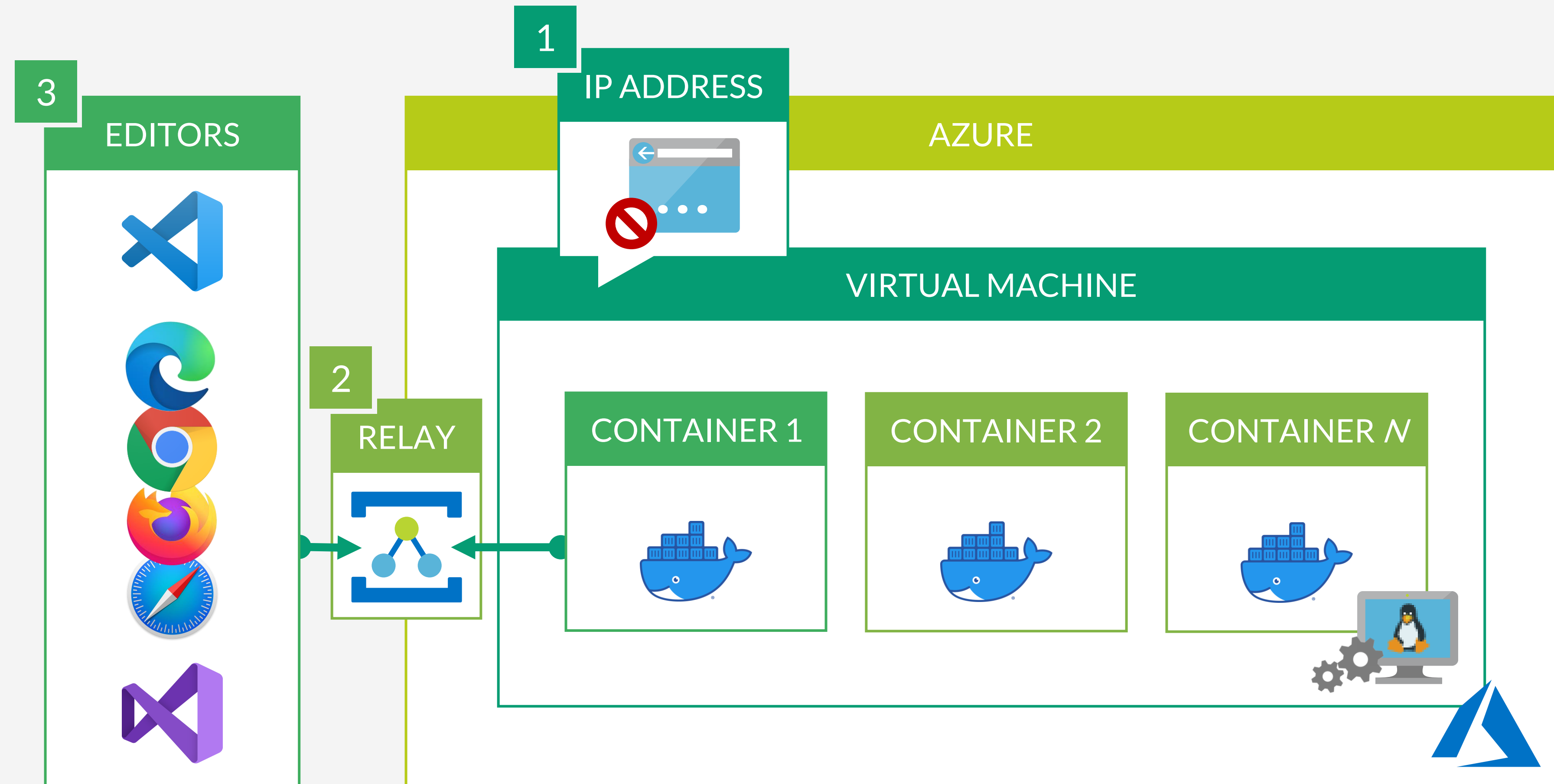
Environments make outbound-only connections to [Azure Relay](#) and are:

- ✓ End-to-end Encrypted
- ✓ Authenticated
- ✓ Authorized



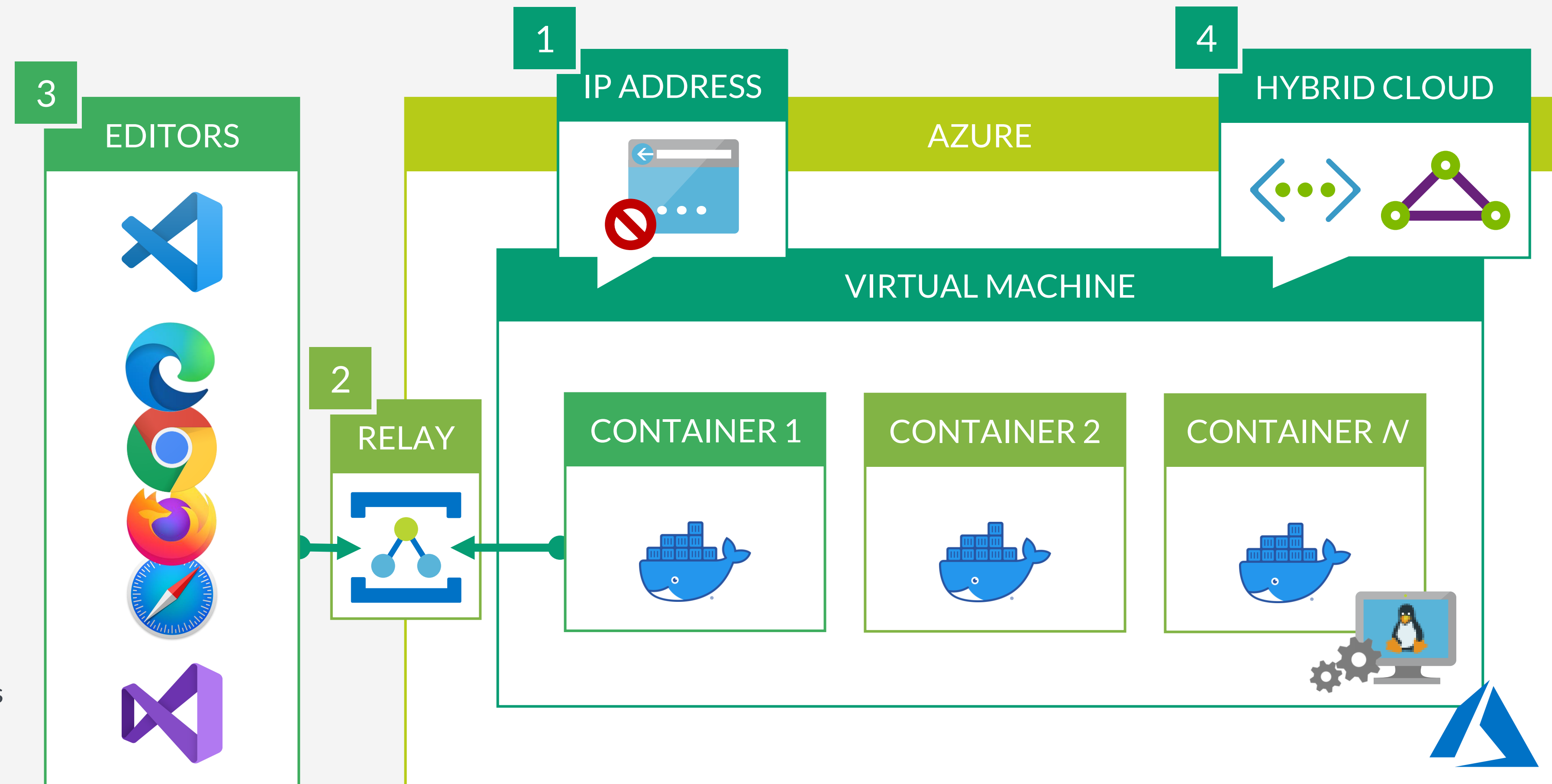
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- 3 CONNECTED CLIENTS**
Clients also leverage Azure Relay to eliminate intrusive changes to firewall and network infrastructure.



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- 3 CONNECTED CLIENTS**
Clients also leverage Azure Relay to eliminate intrusive changes to firewall and network infrastructure.
- 4 HYBRID CLOUD**
Private [virtual networks](#) and connections (via [ExpressRoute](#)).



VISUAL STUDIO ONLINE STORAGE

1

SOURCE OF TRUTH

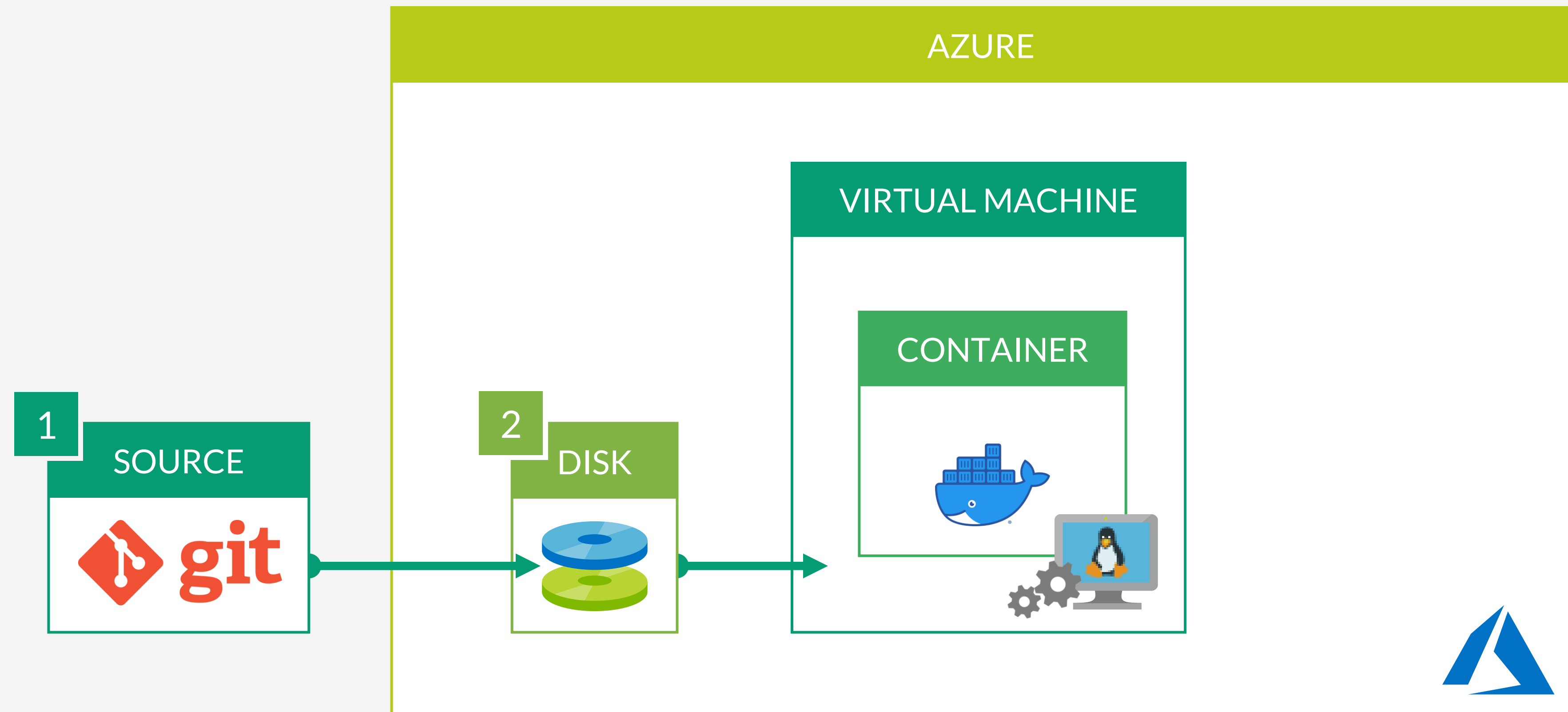
VS Online leverages existing [Git](#) repositories as the source of truth.



VISUAL STUDIO ONLINE STORAGE

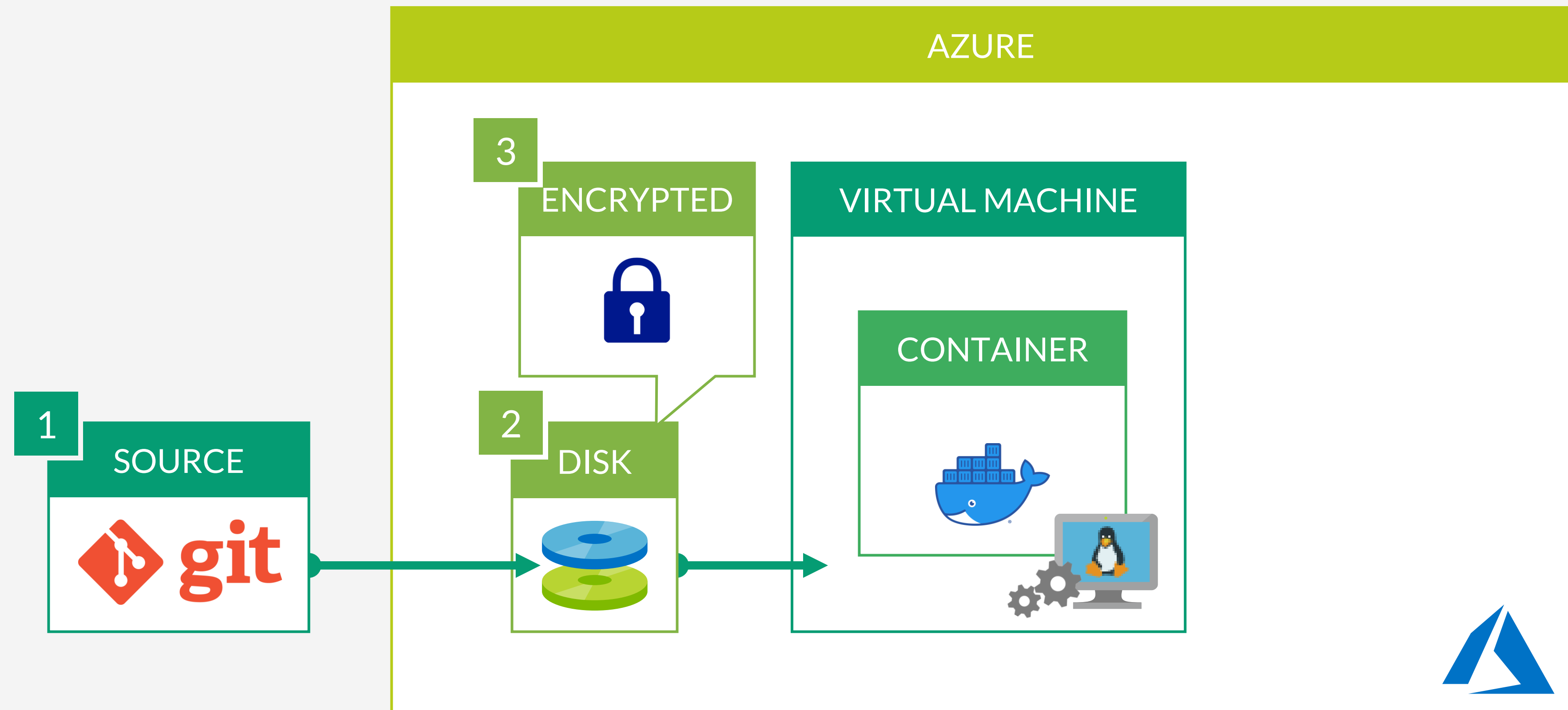
1 SOURCE OF TRUTH
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2 DEDICATED STORAGE
Each environment runs in its own dedicated and isolated storage account, which is mounted to the VM when active.



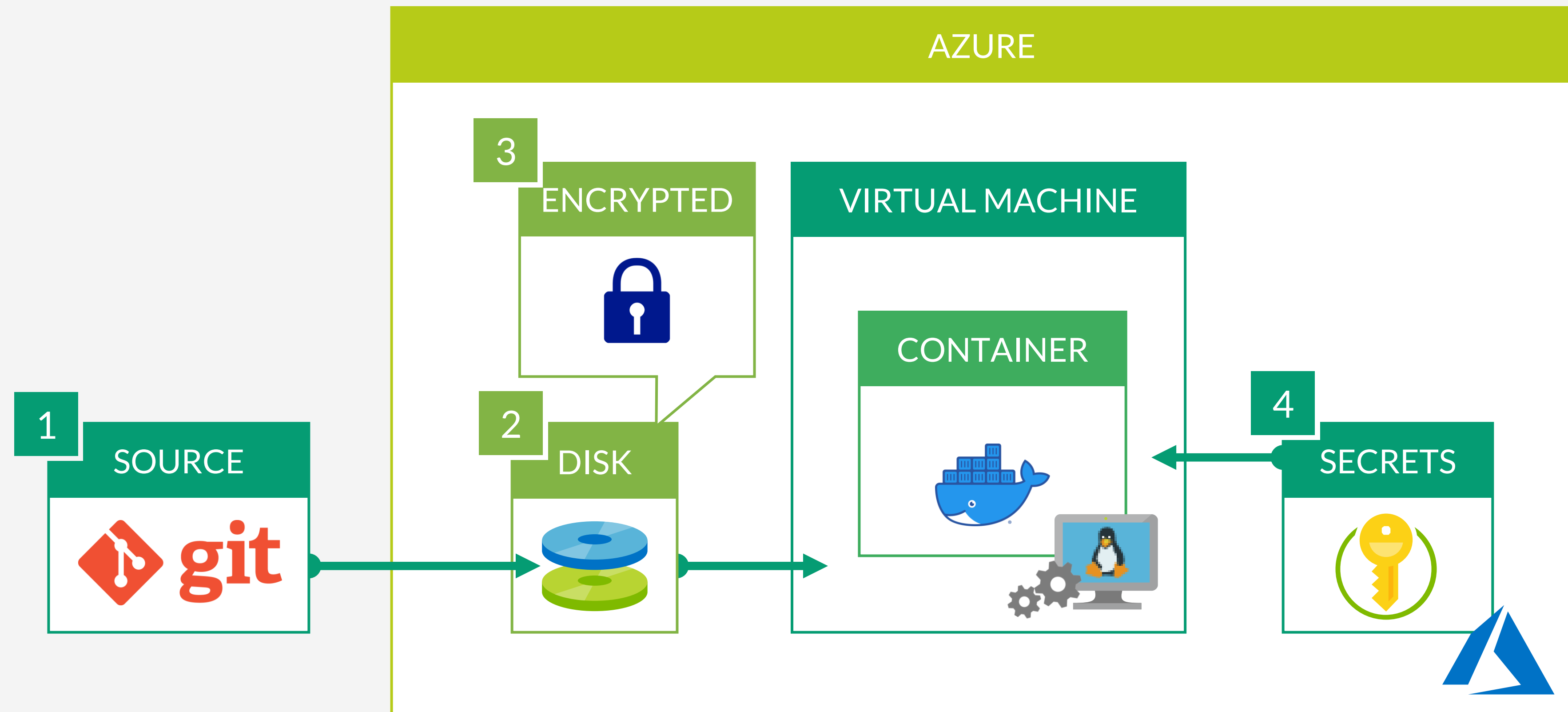
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Environment [storage is encrypted](#) with Microsoft managed keys to protect data.



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- 3 ENCRYPTED AT REST**
Environment [storage is encrypted](#) with Microsoft managed keys to protect data.
- 4 SAFEGAURDED SECRETS**
Configured variables and keys are stored within [Azure Key Vault](#) and exposed within the container.*



VISUAL STUDIO ONLINE PERMISSIONS

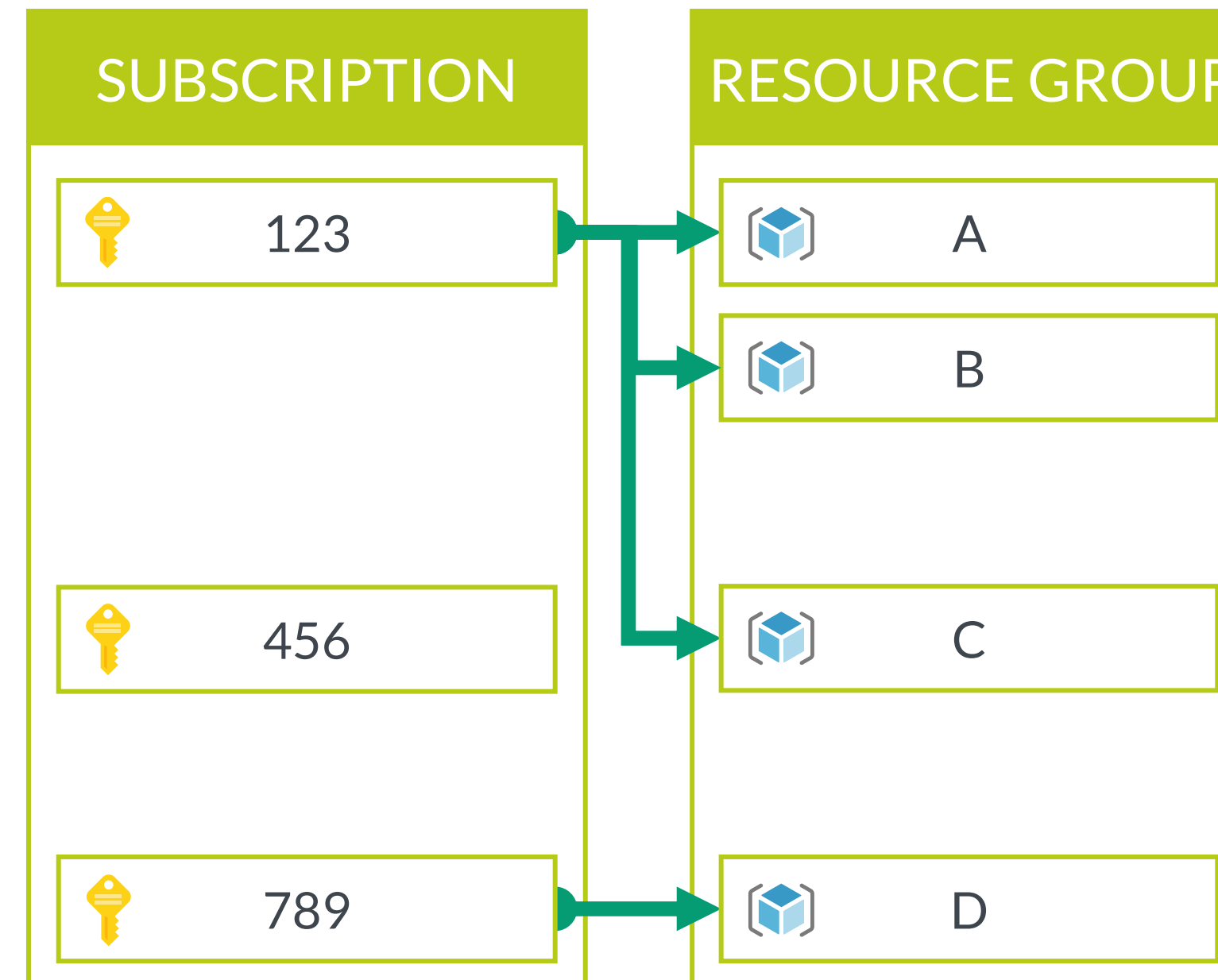
1

FLEXIBLE ORGANIZATION

Use [Azure Subscriptions and Resource Groups](#) to organize across cost centers, divisions and users.

1

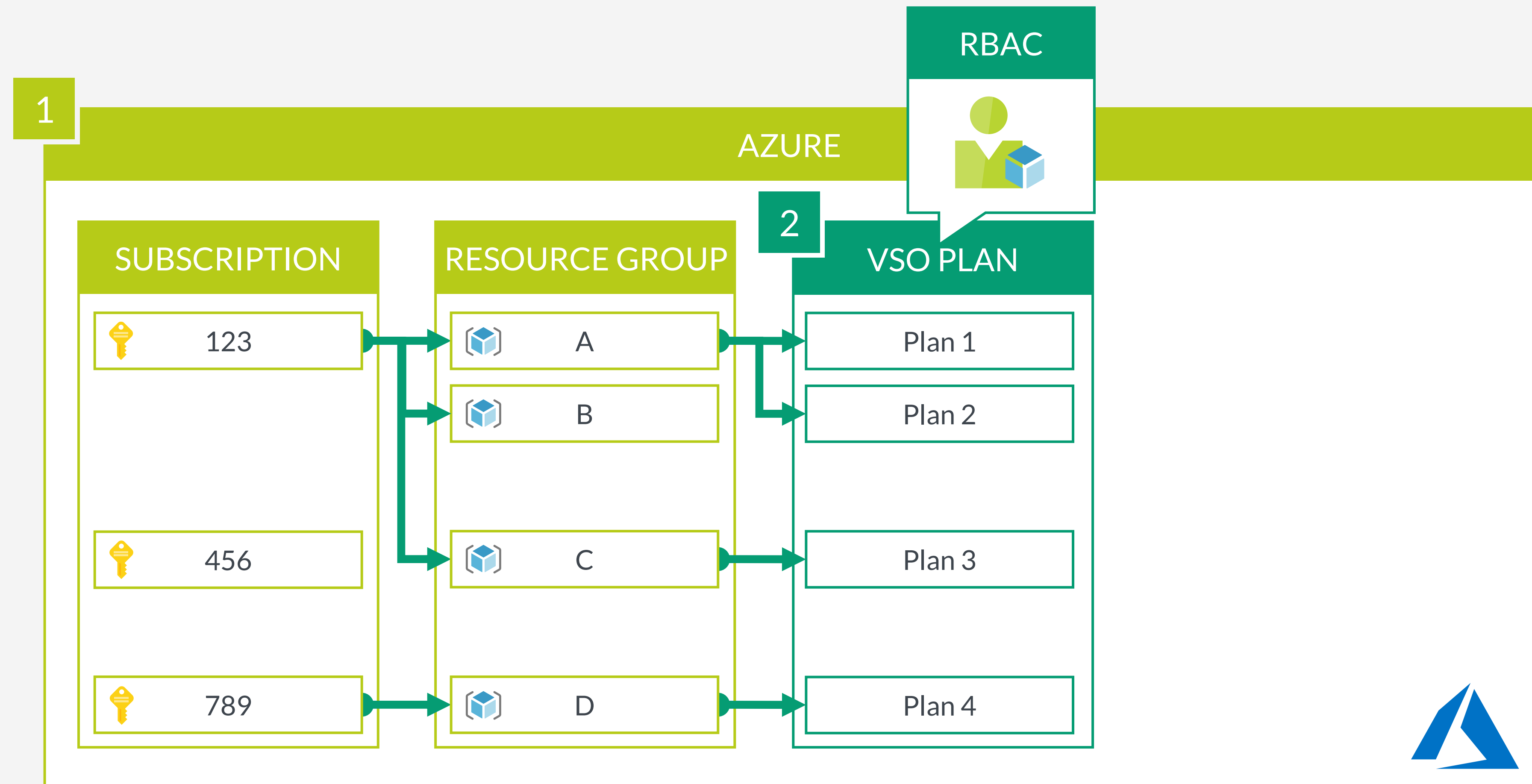
AZURE



VISUAL STUDIO ONLINE PERMISSIONS

1 FLEXIBLE ORGANIZATION
Use [Azure Subscriptions and Resource Groups](#) to organize across cost centers, divisions and users.

2 CONTROL WITH PLANS
[VS Online Plans](#) group environments together to allow simple role-based access control and policy enforcement.*

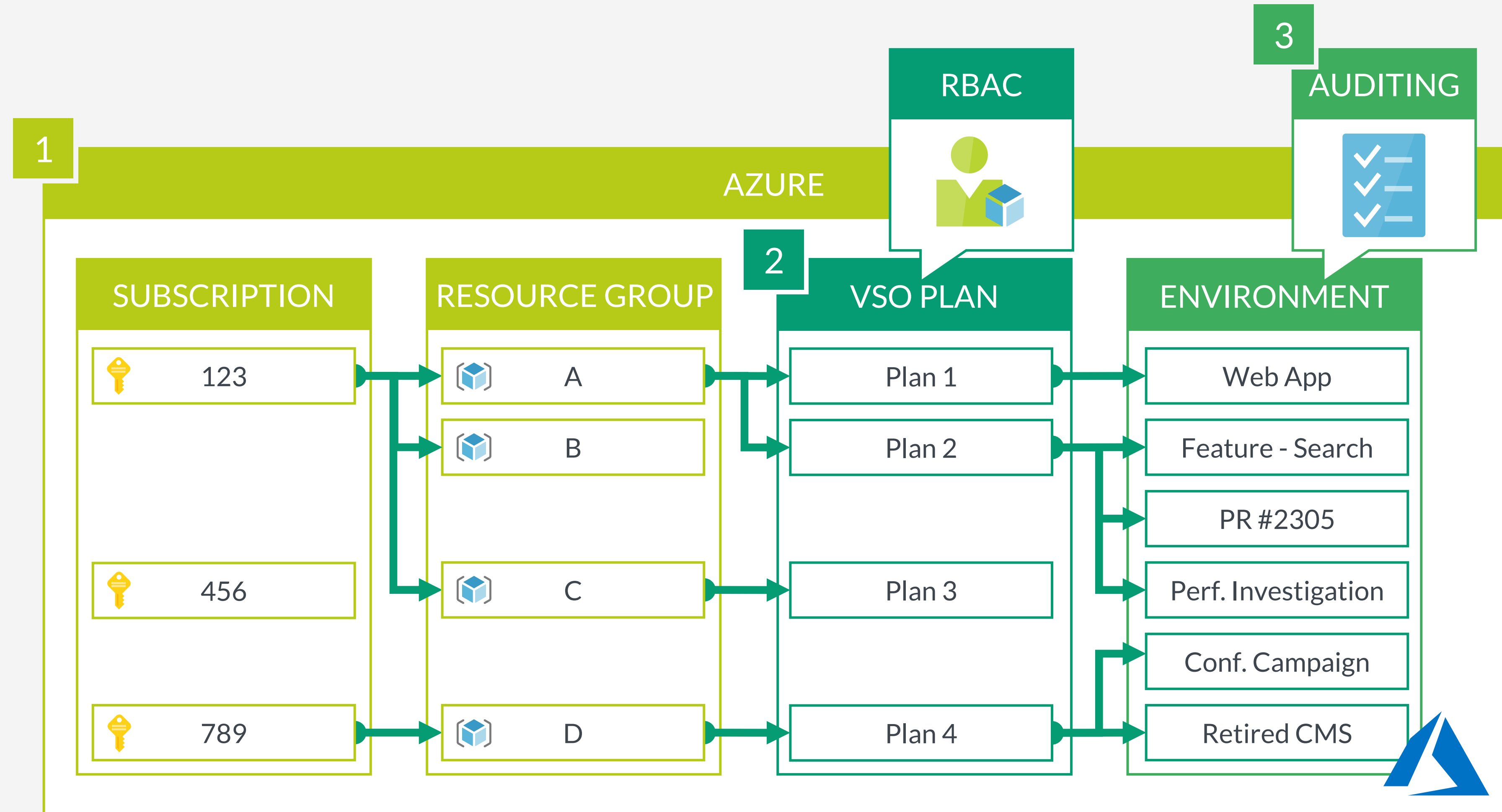


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[VS Online Plans](#) group environments together to allow simple role-based access control and policy enforcement.*

3 AUDIT LOGS
Creation, deletion and access to environments is logged for increased transparency.*



VISUAL STUDIO ONLINE CONFIG

1

"GIT-OPS"

Configuration is versioned in Git. Git credentials are proxied from the client machine, not stored in the environment.

1

SOURCE



ENV CONFIG



VISUAL STUDIO ONLINE CONFIG

1

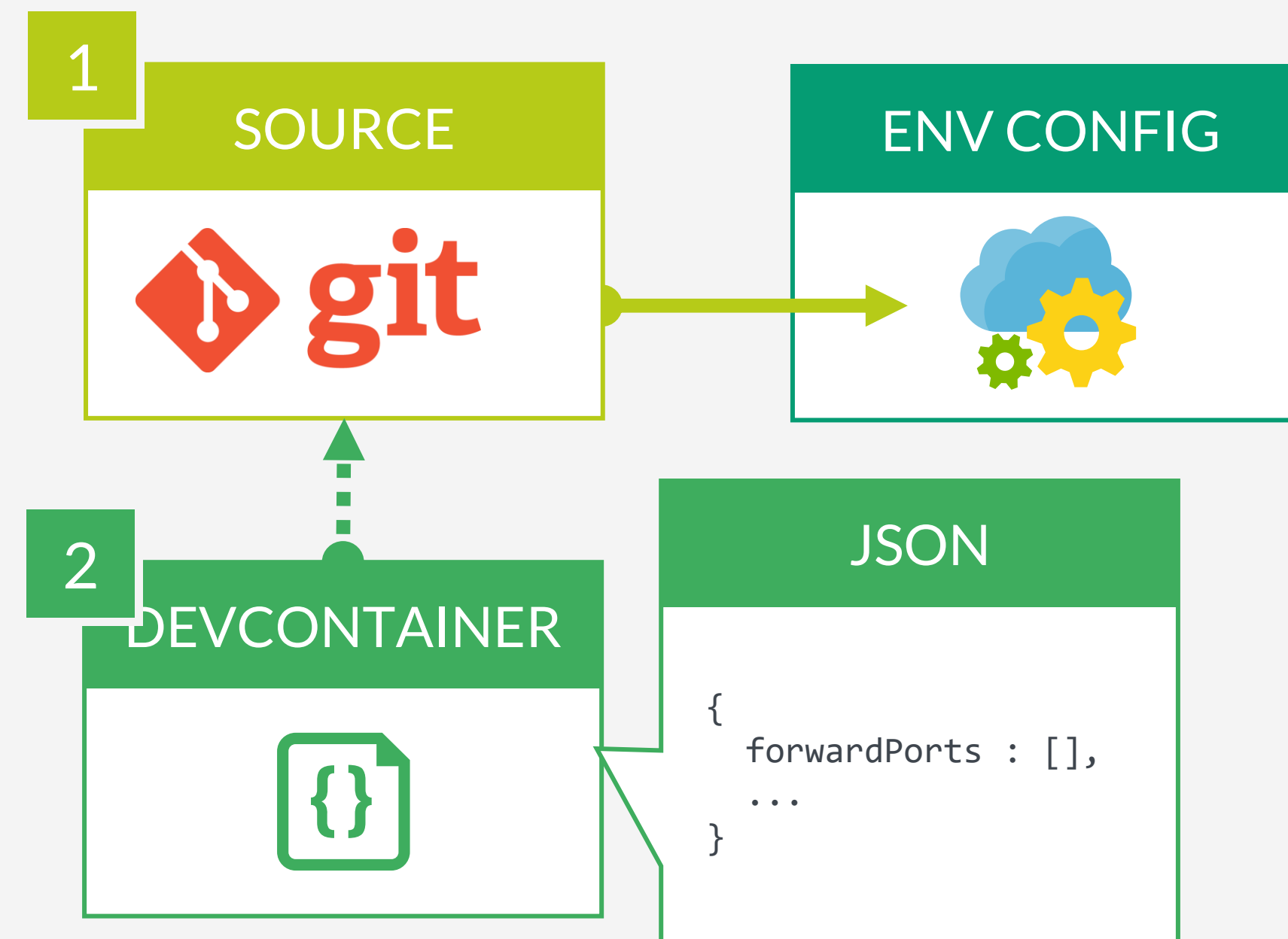
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SECURE BY DEFAULT

[Configure devcontainer.json](#) to expose ports to client machine and customize environment container/user.



VISUAL STUDIO ONLINE CONFIG

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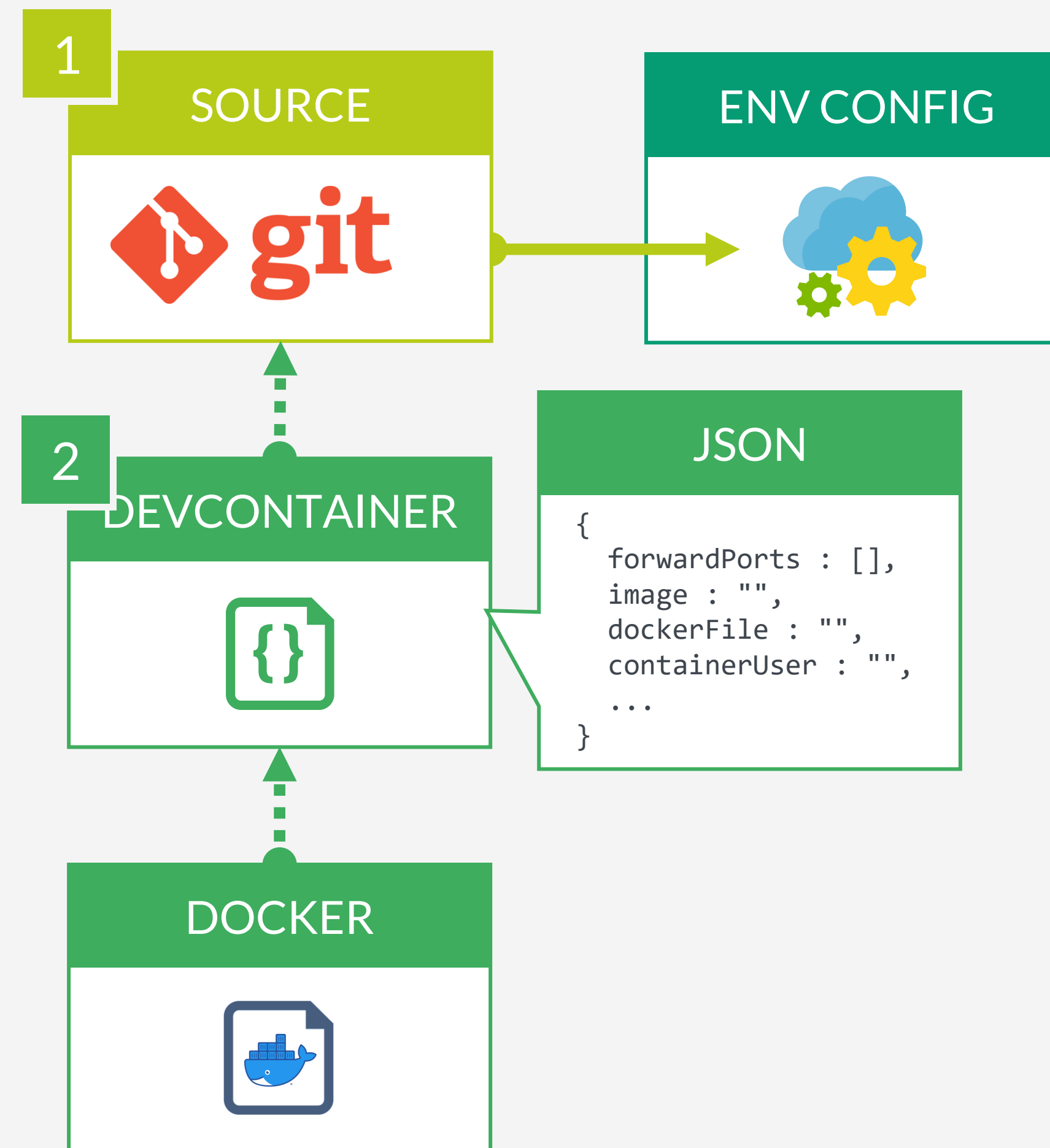
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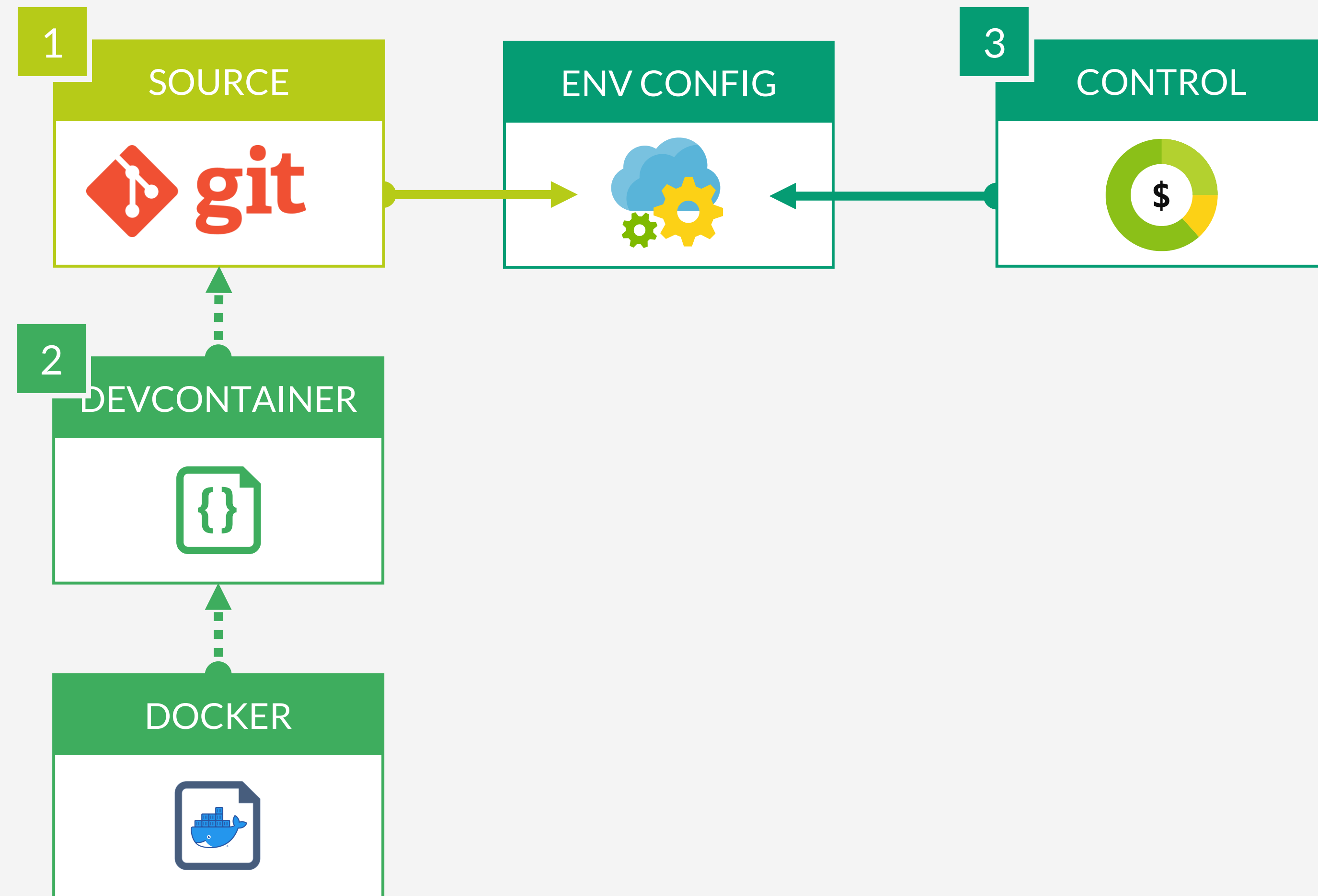
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COST CONTROL

Select the virtual machine (Basic, Standard, Premium or GPU) and the auto-suspension policy per environment.



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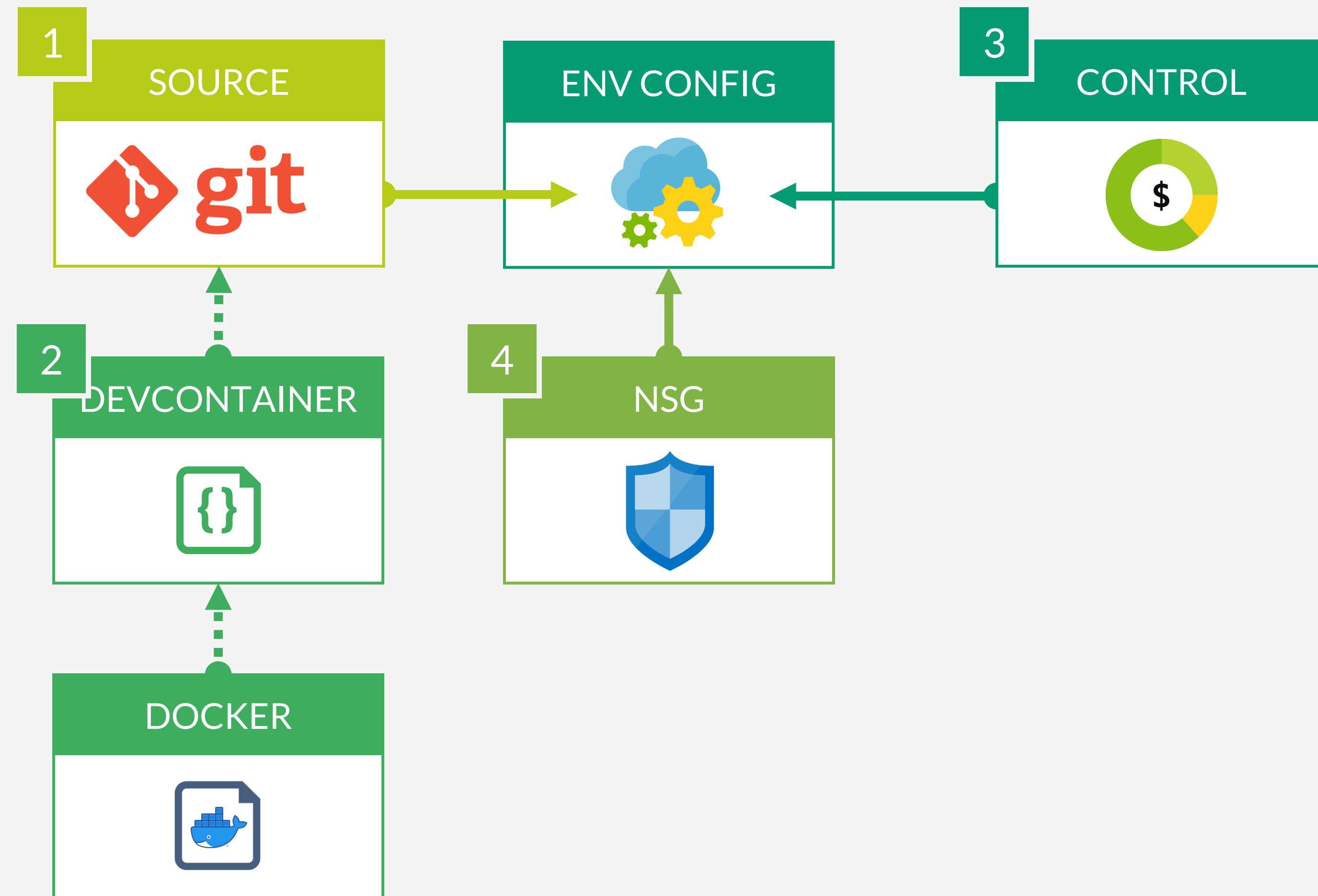
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4

NETWORK SECURITY GROUP

Filter outbound network traffic by destination, protocol or port.*



VISUAL STUDIO ONLINE GEOGRAPHIES



VISUAL STUDIO ONLINE PRICING

INSTANCE TYPES / HR

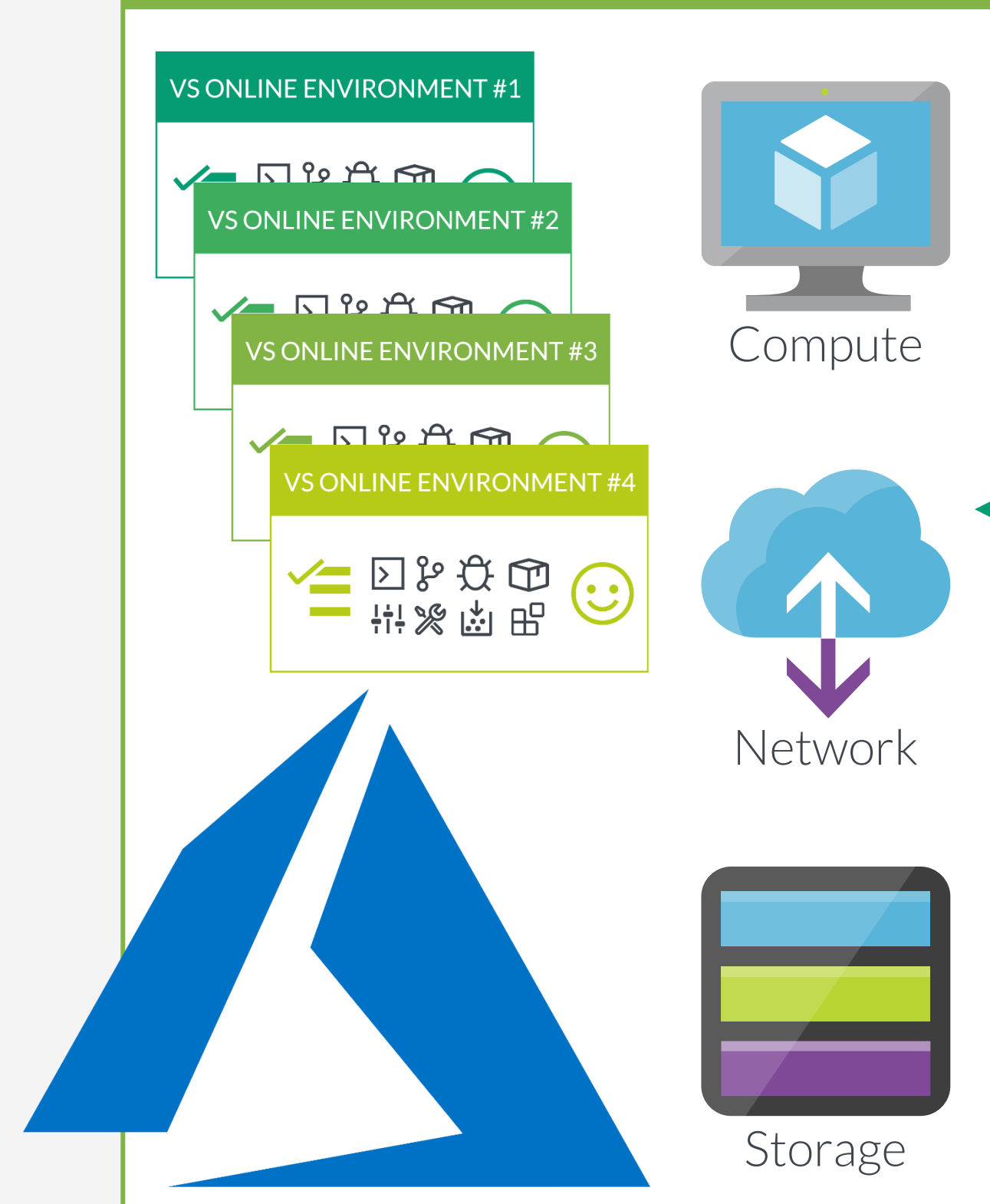
25
¢ **BASIC**
CORES: 2
RAM: 4 GB
DISK: 64 GB SSD

46
¢ **STANDARD**
CORES: 4
RAM: 8 GB
DISK: 64 GB SSD

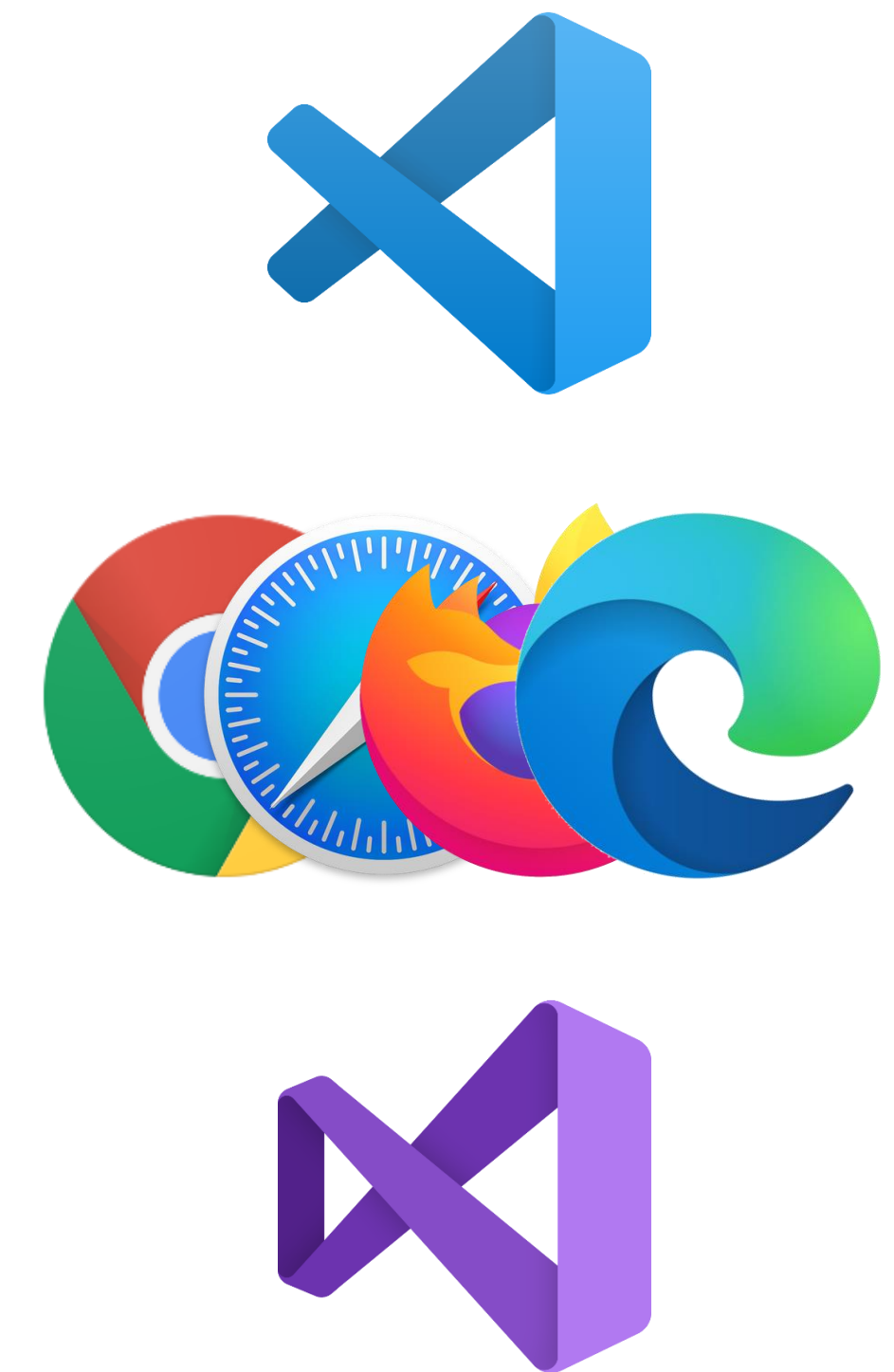
88
¢ **PREMIUM**
CORES: 8
RAM: 16 GB
DISK: 64 GB SSD

2.75
\$ **GPU***
CORES: 6
RAM: 56 GB
GPU: 1 w/ 12 GB
DISK: 64 GB SSD

AZURE-HOSTED



EDITORS



DEMO



DEMO

1. SETUP + GITHUB
2. LOCAL ENVIRONMENT
3. DEVCONTAINER
4. CODESPACES
5. DEVOPS

ROADMAP



- Basic & GPU instances
- Sharable Plans
- Docker Compose support
- Secrets management
- VS Code Settings sync

- Windows environments*
- VS IDE support*

- General availability
- Offline environments
- Retention policies
- vNet Support
- Audit logging

- Windows environments*
- VS IDE support*



QUESTIONS

LEARN MORE

<https://aka.ms/vso-online>